ARTIFICIAL INTELLIGENCE IN BUSINESS AND DECISION MAKING: ANALYSIS OF BENEFITS AND CHALLENGES FOR CONSULTANCY SMES

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Abstract

Purpose. *This study examines how consultancy SMEs that have not yet adopted AI judge its adoption and its use in business activities and specifically in decision making and perceive its advantages and disadvantages.*
Design/methodology/approach. *We conducted four case studies and semi-structured interviews involving four consultancy SMEs that have not yet adopted AI.*
Findings. *In the consultancy sector, AI may be applied in Customer Relationship Management, data analysis, training, and work support. However, AI may not be the best technological solution and competent people may be lacking. The use of AI in decision making is viewed with more caution: possible advantages (e.g., higher efficiency, work facilitation) are recognised, but some perceived disadvantages (e.g., ethical, privacy, and responsibility issues; distortions in the decision-making process) must be addressed.*
Practical and Social implications. *AI can bring numerous benefits for consultancy SMEs, which must be aware of the potential disadvantages. Policy makers should design effective interventions that support and guide these firms in adopting AI.*
Originality of the study. *This study focused on consultancy SMEs, which may encounter difficulties in the introduction of AI due to insufficient resources and knowledge, while at the same time being pushed by the consultancy sector to urgently incorporate AI.*

1. Introduction

Artificial intelligence (AI) can be employed to help humans make better decisions in many areas, from medical to business (Metcalf et al., 2019). Within firms, AI is "likely to change the role of management and organisational practices" (Kshetri, 2021, p. 970). AI can indeed match or outperform human workers in carrying out activities requiring high cognitive capabilities and big data (Booyse and Scheepers, 2024; Manyika et al., 2017). However, there are barriers associated with AI adoption in SME (Hansen & Bøgh, 2021) and, most of all, in decision making (Booyse & Scheepers, 2024; Moser et al., 2021).

SMEs play an essential role in the economies of many countries (European Commission, 2023). To remain competitive, SMEs must adopt advanced technologies, including AI (Bhalerao et al., 2022). However, they may lack the resources and knowledge to adopt and implement AI (Hansen & Bøgh, 2021). Other challenges SMEs face in adopting AI include poor financial position, firms' size, and data quality (Bhalerao et al., 2022).

The adoption of AI in decision making seems to be particularly challenging for all firms. AI has serious limitations in making unstructured decisions such as strategic ones, while it can completely replace workers and effectively make structured and semi-structured decisions (Duan et al., 2019; Tamò-Larrieux, 2021). Moreover, the adoption of AI is subject to obstacles since human decision makers usually prefer to delegate a decision to a colleague rather than to AI (Leyer & Schneider, 2021). Finally, using AI for decision making purposes has ethical implications that require a precise definition of responsibilities and the deciphering of the process that led to a certain decision (Duan et al., 2019).

Concurrently, AI may have transformative implications for the consultancy sector (Samokhvalov, 2024). Customers are interested in AI applications and expect more tailored and innovative solutions, whereas consultants face challenges in satisfying customers' desires and their role is questioned (Samokhvalov, 2024). AI can be a useful tool to devise solutions, but will unlikely fully replace human expertise (Samokhvalov, 2024). AI will instead provide input to the decision making and tasks (Feuerriegel et al., 2022), while consultants will remain accountable for the decisions taken and will play a key role due to their unique skills and client relationships (Samokhvalov, 2024). Nevertheless, firms must meet customers' interests in AI and urgently adapt and incorporate this technology into their business (Samokhvalov, 2024).

Based on this premise, this study examines how consultancy SMEs that have not yet adopted AI judge, in terms of expectations and concerns, its adoption and its use in business activities and specifically in decision making, and perceive its consequences, its advantages and disadvantages. Specifically, we aim to answer the following research questions:

- How is AI perceived in consultancy SMEs?
- What are the perceived benefits that consultancy SMEs can derive from the use of AI and what the perceived risks they face?
- How can AI be used in the decision making of consultancy SMEs?
- What are the perceived benefits that consultancy SMEs can derive from the use of AI in decision making and what the perceived risks they face?

Consultancy SMEs that have not yet adopted AI represent a particularly interesting study sample. These firms may perceive big pushes to adopt AI due to the recent changes in the sector, but at the same time may be reluctant to introduce this technology due to the possible lack of resources and the perceived risks arising from the use of AI in business activities, with particular regard to decision making. Consultancy SMEs that have not yet adopted AI are therefore a suitable sample of firms to answer the research questions above.

In this study, we adopted a qualitative approach, conducting four case studies and semi-structured interviews involving four consultancy SMEs that have not yet adopted AI.

The remaining of the paper is structured as follows. Section 2 provides a theoretical framework on the topic, focusing on the definition and types of AI, the adoption of AI in SMEs, and the use of AI in decision-making. Section 3 describes the methodology adopted, and specifically the method and sample selection. Section 4 describes how the data were analysed and main findings. Section 5 discusses the results in light of previous literature. Section 6 concludes.

2. Literature review

2.1. Definition and types of AI

Today there is no universally recognised and accepted definition of AI. McCarthy (2007, p. 2), one of the founding fathers of AI, defines it as "the science and engineering of making intelligent machines, especially intelligent computer programs". Nilsson (2009), instead, defines AI as the activity aimed to make machines intelligent, where intelligence refers to the quality that allows an entity to function properly and prudently in its environment. More recently, in its broader definition, AI is equated with an algorithm (Sheikh et al., 2023). However, this definition is not particularly appropriate since the term algorithm is prior to the concept of AI and is widely used even outside this specific field of research (Sheikh et al., 2023).

AI can be classified both according to its evolutionary state, and according to the type of intelligence that the system demonstrates to possess (Ka-

plan & Haenlein, 2019). Each type of AI, given its characteristics, is best able to perform certain work activities and has a more or less extensive use in decision making (Kaplan & Haenlein, 2019).

Based on the state of evolution, AI can be classified into Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), and Artificial Super Intelligence (SAI) (Kaplan & Haenlein, 2019). Artificial Narrow Intelligence, also referred as weak AI, is programmed to perform the tasks assigned (e.g., extracting information from a specific dataset) and has many advantages, such as simplification of decision making and better execution of individual tasks than humans (Kaplan & Haenlein, 2019). Artificial General Intelligence, also referred to as strong AI, allows machines to understand, emulate the human mind and human behaviour, learn cognitive skills and perform complex intellectual tasks very similar to those performed by humans (Kuusi et al., 2022). Lastly, Artificial Super Intelligence, the most advanced, powerful and intelligent type of AI, is capable of overcoming human intelligence as it can interpret human emotions and experiences, replicate human behavioural intelligence, and develop its own thinking skills and emotional understanding, beliefs and desires (Kaplan & Haenlein, 2019).

Instead, based on the type of intelligence demonstrated, AI can be classified into analytical, human-inspired or humanised AI (Kaplan & Haenlein, 2019). Analytical AI has characteristics attributable exclusively to cognitive intelligence, i.e., it can represent the world and use previous experiences to learn and guide new decisions (Kaplan & Haenlein, 2019). Human-inspired AI is associated with emotional abilities and can thus recognise and consider emotions during decision making (Kaplan & Haenlein, 2019). Lastly, humanised AI has cognitive, emotional, and social intelligence and is therefore self-conscious and aware when interacting with humans (Kaplan & Haenlein, 2019).

2.2. Adoption of AI in consultancy SMEs

Consultancy SMEs, as knowledge-intensive firms, are particularly well-positioned to benefit from AI across a range of business activities including data analysis, generating market insights, enhancing customer relationship management, refining social media strategies, improving decision-making processes, and offering more sophisticated problem-solving solutions (Bhalerao et al., 2022; Bunte et al., 2021). In these firms, AI can automate data-heavy processes, enabling consultants to deliver more strategic insights with greater accuracy and speed. For example, AI-driven tools can help in segmenting client data more effectively, identifying emerging trends, and crafting highly targeted recommendations that align closely with client objectives.

The adoption of AI offers distinct advantages tailored to the consultancy sector, such as enhanced operational efficiency through the automation of routine tasks, optimized service delivery with customized AI-based solutions, and reduced operational costs due to more efficient resource utilization (Bhalerao et al., 2022; Mantri et al., 2023). Additionally, AI supports better risk management by predicting market shifts, while saving time through streamlined processes and providing access to advanced analytics that can be pivotal in crafting evidence-based strategies for clients (Bhalerao et al., 2022; Mantri et al., 2023).

In an increasingly competitive landscape, AI is not just a technological upgrade but a strategic necessity for consultancy SMEs. It allows these firms to differentiate their service offerings, deliver added value, and maintain a competitive edge (Bhalerao et al., 2022). By integrating AI, consultancy SMEs can offer clients deeper insights and innovative solutions that larger firms might struggle to achieve with the same agility (Hansen & Bøgh, 2021). For consultancy SMEs, being at the forefront of AI adoption is key to remaining relevant, attracting new clients, and retaining existing ones.

However, despite these clear benefits, the road to AI adoption for consultancy SMEs is fraught with challenges (Cubric, 2020). One major hurdle is the limited knowledge and awareness of how AI can be effectively utilized within the specific context of consultancy services (Bunte et al., 2021). Many firms lack a well-defined AI strategy that aligns with their business objectives (Mantri et al., 2023). Additionally, high upfront costs and the significant time investment required for successful AI implementation can be prohibitive for smaller firms (Bunte et al., 2021).

Resource limitations are particularly acute for consultancy SMEs, where financial constraints, inadequate technological infrastructure, and a shortage of AI expertise present significant barriers (Bhalerao et al., 2022; Bunte et al., 2021; Hansen & Bøgh, 2021; Mantri et al., 2023). Recruiting skilled workers who possess both consultancy and AI competencies is difficult, especially for smaller firms operating with tighter budgets. Furthermore, access to quality data, crucial for AI applications, is often limited, making it challenging for these firms to develop robust AI solutions.

Cultural resistance to change within consultancy SMEs also plays a role in slowing AI adoption (Mantri et al., 2023). Many firms struggle with the shift from traditional consultancy methods to AI-driven processes, which may require significant changes in workflows, communication strategies, and decision-making approaches. Inefficient communication channels and the inherently smaller scale of consultancy SMEs further complicate the integration of AI, as these firms may lack the organizational depth to support extensive AI initiatives (Mantri et al., 2023).

Overall, while AI holds immense potential for consultancy SMEs, realizing this potential requires overcoming significant challenges. Tailored

strategies, such as phased AI adoption, targeted upskilling, strategic partnerships, and leveraging scalable AI solutions, are essential to help these firms navigate the complexities of integration and fully harness the benefits of AI in delivering high-impact consultancy services.

2.3. AI and decision making

The use of AI in decision making is discussed with reference to the types of decision making, the interaction between AI and human decision makers, and the factors affecting the implementation of AI for decision making.

2.3.1 Types of decision making

According to Anthony (1965), there exist three levels of decision making. The first level concerns strategic planning. Strategic decisions are typically unstructured, i.e., there is no standardised procedure to understand the best choice to take (Edwards et al., 2000; Simon, 1987). The second level is management control. Compared to a strategic decision, a management control decision is more structured and requires strategic objectives to be transformed into standardised operational objectives and criteria to understand the best choice to take (Edwards et al., 2000; Simon, 1987). The third level relates to operational control. The decisions that fall into this category are well defined, limited in type, and even more structured than the previous ones and based on sources within the organisation (Edwards et al., 2000). More recently, Simon (1987) identified a fourth level of decision making, for which a decision is not required because the activities to be carried out are defined and planned.

With reference to decision making, there are AI systems that can only support or assist the human decision maker, whereas others can completely replace it (Duan et al., 2019; Edwards et al., 2000). Specifically, for the first three levels of decision making (i.e., strategic planning, management control, and operational control), the systems used as decision support increase decision quality, although the ultimate effectiveness depends on the human decision maker (Duan et al., 2019). In addition, expert systems replacing the human decision maker are effective at the management and operational level but have serious limitations at the strategic level (Duan et al., 2019). Consequently, the replacement of the decision maker by AI is considered useful in the case of decisions of a structured and semi-structured type. In contrast, for unstructured decisions, AI supports but does not replace the decision maker (Duan et al., 2019). Lastly, a system used to support decision makers does not necessarily save time (Edwards et al., 2000). Instead, when the system totally replaces the human decision maker, the time needed to make decisions is reduced (Edwards et al., 2000).

2.3.2 Interaction between AI and human decision makers

Two approaches describe how AI relates to human decision makers. The first approach, called decision automation, implies a substitution of the human decision maker with the new cognitive technologies that are being developed (Langer & Landers, 2021). The second approach, called decision augmentation, considers and envisages, instead, a collaboration between the human being and AI to improve cognitive performance together, mainly in terms of quality and efficiency (Langer & Landers, 2021).

Regarding decision automation, machines are now progressively establishing themselves as decision-making entities (Tamò-Larrieux, 2021). This may create fear, despite decision automation may allow to overcome the unconscious and prejudices of the human decision maker that often lead to poor choices with negative consequences for firms' efficiency (Leyer & Schneider, 2021).

However, thinking that AI could assist people in making better decisions would allow us to see AI as an opportunity for growth (Duan et al., 2019). The starting point of decision augmentation is indeed to understand what work activities are currently being carried out by humans and which could instead be deepened or scaled down by the machine (Leyer & Schneider, 2021). The progressive change of opinion that foresees a change from the pursuit of decision automation to the promotion of decision augmentation will see intelligent machines as collaborators of human beings in creating innovative and creative solutions (Leyer & Schneider, 2021).

What is evident, however, is that the path leading to a decision by AI is still unknown. Human decision makers prefer indeed to delegate a decision to a colleague rather than to AI for several reasons, including a lack of confidence in AI, a lack of knowledge about how AI makes a decision, higher confidence in human abilities, the desire to keep control, and the system inability to adapt to the specific context (Leyer & Schneider, 2021). Another important issue is that the effectiveness resulting from the introduction of AI tools in decision making depends largely on the acceptance by human decision makers, and the use they make of them (Duan et al., 2019; Edwards et al., 2000). Poor knowledge of technology and a reduced understanding of the system can thus negatively affect the relationship between the decision maker and AI (Duan et al., 2019). On the contrary, lower prejudices, the potential to reduce workload, and the new insights AI could propose are among the reasons that encourage people to delegate a decision to AI (Leyer & Schneider, 2021).

2.3.3 Factors affecting the implementation of AI for decision making

To ensure a successful implementation and therefore avoid bottlenecks and obstacles, it is necessary, first of all, that the firm understands the technology behind the system used and, specifically, which technology performs a given activity, as well as the strengths and weaknesses of the chosen systems (Duan et al., 2019).

Another fundamental factor that can greatly influence technological success, and therefore a correct implementation of AI in a society, is culture. Culture, understood both nationally and from the point of view of the firm, personal and/or religious values, can influence a person's behaviour and consequently has an impact on the adoption of technology, encouraging its introduction, or on the contrary, delaying it (Lee et al., 2013). Societies with a strongly individualistic culture usually have a positive attitude towards technology and are therefore in favour of its adoption, this is because individuals perceive it as a tool that can help them be more efficient (Lee et al., 2013).

Finally, using AI for decision making purposes has ethical implications. In particular, it requires governments, and competent legal authorities, to define policies and regulatory processes so that they can define responsibilities precisely and decipher the procedure that led the system to take a particular decision (Duan et al., 2019).

3. Methodology

3.1. Method

The research adopted a qualitative analysis in the form of in-depth, semi-structured interviews as they can elicit a free and comprehensive expression of the respondents' perspectives, enabling the collection of a wide range of insights and understandings (Rowley, 2012).

To mitigate subject bias, we implemented a courtroom-style procedure during the interviews and ensured that at least one of the authors was present (Bingham and Eisenhardt, 2011). Before the interview, we met the interviewees several times to establish a trusting relationship (Mellon, 1990).

Based on previous studies, we developed a comprehensive interview guideline to cover all pertinent topics (see Appendix A). The interview covered these issues: definition of AI, future adoption of AI, use of AI in business processes and its perceived consequences, advantages and disadvantages, use of AI in decision making and its perceived consequences, advantages and disadvantages. The interview guideline was shared with the interviewees before conducting the interview.

During the interviews, we extracted more detailed information by asking questions such as "*What do you mean by that?*" and "*Could you please explain this in more detail?*". Additional questions were also posed whenever relevant information emerged.

3.2. Sample selection

Case selection was carefully designed to capture the diverse realities within consultancy SMEs. The firms were chosen based on their size, ranging from micro (1-9 employees), small (10-49 employees), to medium-sized firms (50-249 employees), ensuring representation across different organizational scales. This variation allows us to explore how AI adoption challenges and opportunities may differ based on firm size and resource availability. Additionally, the selected cases span different sectors within consultancy—ranging from IT services to coaching and vocational training—enabling a more comprehensive analysis of how sector-specific dynamics influence AI perceptions and adoption. By incorporating firms with distinct characteristics, this study aims to provide a richer and more nuanced understanding of the factors affecting AI adoption in consultancy SMEs, thereby offering insights that are both broad and applicable across different contexts within the industry.

The interviews targeted individuals playing pivotal roles in the decision-making processes and, specifically, holding positions related to firm ownership and management.

Table 1 describes the characteristics of selected firms.

Table 1 Characteristics of selected firms

	Alfa	**Beta**	**Gamma**	**Delta**
Sector	Coaching and vocational training	Mechanical or industrial engineering	IT services and consulting	Consulting and Business Services
Foundation year	2011	2007	2007	2007
Revenues	276.308 €	1.990.249 €	12.219.713 €	156.920 €
Total assets	117.981 €	2.948.687 €	7.991.886 €	119.122 €
Employees	8	32	170	9
Number of interviews	1	2	2	1
Respondent's role	Owner	Two technology transfer engineers	Human Resources & Innovation & Project Manager	Sole administrator

Source: author's elaboration.

4. Findings

4.1. Data analysis

We first transcribed the interviews, which ranged from 30 to 60 minutes. Then, we collected relevant information using the transcribed notes. To reduce interpretation biases (Corbin & Strauss, 2015), this analysis was performed only by a subset of the authors, including the ones who did not participate in the interviews. Lastly, we compared our findings with existing literature to ensure reliability and validity (Yin, 2003).

4.2. Definition of AI

To explore the understanding and cognition of AI, respondents were asked to provide a definition of AI:

Alfa: AI is formed by different subjects […] We build it continuously with our inputs and our requests and you enlarge it. I see it a bit like this, as a kind of global intelligence computerised, automated [...] that we are all collaborating to build by putting stuff in, putting in requests, commands, corrections, etc.

Beta: I would define AI as an information system, in the strict sense of computer science, able to approach and try to emulate what is human thought, understood as a correlation engine.

Gamma: AI is any computer system that implements any training logic according to a training database, or learning database, which provides answers or logical or consequent reasoning.

Delta: AI through algorithms reconstructs the abilities of man, the thinking skills of man [...] therefore that ability to learn the decision-making processes of man and bring them back into a context, perhaps different, where the same metrics, the same models, the same patterns of reasoning are applied.

The proposed definitions offer a multifaceted vision of AI. One vision relates to the technical aspects of AI, which is defined as training computer systems working on databases. The second vision focuses on the relationship between AI and the capabilities of the human being, highlighting how the first is built trying to reconstruct the abilities of the individual, particularly his ability to think. Lastly, the third vision is particularly different from the other two and sees AI as represented by each person who contributes to feed its database.

Moreover, it emerged that the definition is influenced not only by the type of consultancy the firm offers and the interviewee's role but also by the interviewee's educational background. Specifically, the most technical definitions are provided by respondents who cover technical figures at the firm level and have a technical background.

4.3. Future adoption of AI

Most of the interviewed firms want to introduce AI more systematically in the future, for almost all the activities carried out. On the contrary, only a firm is not interested in adopting AI in light of its activities. Specifically, this firm is oriented to creating a new thought or business model, whose objective is to bring out the value from the mind of an individual (a client) and organise it to enhance its identity. This activity does not make AI suitable.

4.4. Use of AI in business processes

The most profitable adoption opportunity is in the field of Customer Relationship Management and, more generally, in the management of supply and demand:

> *Beta: In the other processes AI would not give us such a value so maybe it isn't necessary to invest, but precisely because the business dimension is... that is, we are not big as a firm and the processes are quite simple. But maybe on the part with customers, with identifying after an event the type of services to propose. On this part AI can give value. So the commercial marketing part.*

Another important application regards the extrapolation and analysis of data from the multitude of information on the network or in the firm databases. AI is used to highlight correlations and, above all, reduce the load of activities considered monotonous and repetitive, and consequently transfer the interest of employees to activities deemed to have higher added value:

> *Gamma: How many consultants in life had to go through hundreds of pages of documents to understand where a problem was or to understand how to solve a given problem raised? This is what you are going to make more automated [...] I don't think that this will replace the consultant as the assistant, but it will make his work much faster, allowing him or her to put his intelligence into activities with more added value.*

Lastly, the introduction of AI in the field of training and support for the growth of the individual's work has been suggested.

However, there are many other possible adoptions of AI at the firm level and, consequently, interest in this technology continues to increase.

4.5. Perceived advantages and disadvantages of using AI in business processes

AI is considered fascinating and profitable as it can improve human decision making through the synthesis and combination of information and the support provided in decision making. This is particularly helpful since, according to the interviewees, the synthesis of information is neither a trivial nor a fast process.

However, the interviewees perceive that the investment may not always be repaid by the benefits for many reasons.

First, there are many useful and high-level software and advanced technologies capable of meeting specific needs and, consequently, AI may not be the best technological solution.

Second, the introduction of AI is not always justified. For example, Gamma, a firm that creates AI systems for its customers, is not currently interested in including AI at the firm level because this technology is already integrated in the systems used daily for project realisation.

Third, since AI is a new technology, at present there may not be competent people able to guide a complete and adequate training path to the firm's needs. Moreover, this path would require considering and addressing too many variables, reducing the efficiency of what has been introduced:

> *Beta: You still know very little, in the sense that everyone wants growth paths, but there are not many competent people within the firm who make these growth path in a structured way. I think maybe in a few years we will be ready. There are some solutions of difficult applicability within our reality, because we are small [...] and because our firm does different things [...] There are too many variables to consider when it comes to managing people, so I would take AI with caution.*

4.6. The use of AI in decision making

AI is recognised as a useful tool to support decisions. However, the possibilities of adoption, and the type of system most suitable to use, depend on the product offered by the firm.

In firms that face similar but never identical projects, for which there is therefore a lack of business cases and historical data that can guide AI in making choices, relying completely on AI could not be a wise and efficient choice since the ouput will not be supported by data and therefore be "random".

Instead, AI could be of greater use for manufacturing firms, where operations are indeed mainly based on technical and objective conditions and rely on indicators obtained from data collected at the firm level. In this case, decisions are more standard, and the autonomy of AI is conceivable.

In summary, at the current state of the art, AI can be implemented with

less difficulty in processes with decisions characterised by a high intensity of data. On the contrary, for all decisions that cannot be based on objective data or for which it is preferable to make a choice based on one's inclinations, the implementation of AI is not currently considered possible and beneficial.

4.7. Perceived advantages and disadvantages of using AI in decision making

According to the interviewees' perceptions, AI may offer several advantages in decision making. First, AI may be an excellent tool and increase efficiency during the data collection and analytical phase. This is especially true for data-intensive decisions since AI allows decision-makers to go beyond the considerations that emerge instantly.

Second, AI may overcome the problem of specialisation and promote interdisciplinarity in the various sectors of a firm:

> *Beta: For each sector, for each role, for each task, there would be a need for an expert figure in the field. This thing fails with AI in the sense that it can replace different tasks and can be a tool that gives the possibility to know many more things. None of us are all-rounders, we all specialise in one area.*

Lastly, AI may facilitate the work and everyday life of all and also benefit the health of the person and increase his/her free time.

At the same time, the interviewees believe that using AI in decision making may imply some disadvantages and issues to be resolved that may cause some resistance. In fact, there are interviewees who consider themselves a great admirer of AI and are eager to explore and exploit it as much as possible. In contrast, there are also interviewees who still maintain a certain distance. Specifically, the use of AI in decision making is perceived to be also associated with a risk of dealing with increasingly homogeneous solutions and a risk of overlooking certain important aspects and some of the repercussions that AI may entail.

AI may also decrease the level of skills such as problem solving, critical sense, or even reasoning. These skills must be constantly trained, but if we excessively rely on AI to perform this reasoning, workers may not develop these skills. This is a problem since complexity cannot be eliminated and workers must be able to deal with it.

The use of AI in decision making may raise questions of ethics and fairness. These principles are input parameters for new technologies, but AI does not seem to respect these principles as humans would.

Consequently, an explicit transfer of sensitive data to AI is still viewed with caution because AI is judged less reliable than a human being. Thus it would be preferable that sensitive issues are dealt with by a person. However, AI seems to be necessarily associated with less privacy since data is essential to AI.

The issue of responsibility, therefore, is a huge legislative gap that needs to be addressed.

At the moment, the responsibility for a decision, whether taken by AI or by the individual, falls on the human decision maker. For this reason, the issue of co-responsibility is increasingly being analysed. Co-responsibility is intended to underline the fact that several parts contribute to the development of AI, which therefore becomes responsible for its proper functioning. According to the interviewees, the first that should be considered responsible for a decision are all the individuals who input the data into the system, together with the builders and developers:

Alpha: We're all working together to build AI. [...] The interlocutors in this game are the owners of the various forms of AI. The owners are, according to an ethical point of view and responsibility, the developers, the big tech, users, we who input data and make this intelligence system grow more and more, because we put our intelligence, our observations, our questions, we ask questions to AI, and certainly the institutions. We are all in this game. I doubt that only one of us [...] is able to handle this great question of privacy and ethical problem, but since we are all responsible, we will all need to agree. I think it's very difficult for us all to agree, and I think we can all get help from AI.

AI may also lead to obvious distortions of the way of thinking and sometimes it is unclear how AI comes to a decision. According to the interviewees, not knowing this process negatively affects the credibility and scrupulousness of the decision taken by AI. Therefore, regarding everything that is not objectionable, at the moment it is not believed that AI can make decisions correctly.

Lastly, an important consequence of using AI in decision making regards the possible substitution of a human decision maker. According to the interviewees, at present, there are no major concerns associated with the future of employment as a result of the use of AI in decision making. Instead, the interviewees expect that there will be an evolution of jobs and a higher level of comfort as merely physical or conceptual work activities will be performed by machines. As occurred in the past, humans will be employed in other tasks.

The human factor, today, is thus still relevant and fundamental: the position of the human as a decision maker is not threatened by AI because there would be no overlap of roles. The interviewees believe that at the strategic level, a superficial thought can be easily replicated by AI, quickly and completely. However, if there is a desire for awareness, deepening and mastering a theme, the decision maker's position cannot be threatened:

Delta: AI could produce decision results perhaps faster, more complete and articulated than I could do. A very rapid thought and solution can exist. Those who have already done a strategy in the past can, thanks to AI, put together information and recreate it. But this solution can be very superfi-

cial. Instead, our clients are firms that give themselves the time to stop, to go deep together with us [...] Our work is minable yes. Still, if I can find a space of relationship with my client that focuses on different elements than those on which AI focuses, we will continue to maintain contact with our client.

Moreover, the interviewees note that the decision proposed by AI may not be necessarily in line with the nature of the firm. According to their beliefs, AI can produce useful results, but these help to generate a picture of the situation that is used as a basis for further analysis. Based on this picture, the decision maker will take a direction that is consistent and compatible with his/her identity, thinking, and strategic and development directions.

AI may thus offer support and validation to the decision maker without excluding the human, who provides an important value.

5. Discussion

Table 2 summarises the main results of our analysis.

Table 2 Main findings

Topic	Findings
Definition of AI	Main types of definitions: • Definition focused on the technical aspects of AI • Definition focused on the relationship between AI and the capabilities of the human being • AI as represented by each person who contributes to feed its database Influencing factors: • Type of consultancy offered • Interviewee's role and educational background
Future adoption of AI	General desire to introduce AI in the future, for almost all the activities carried out
Use of AI in business processes	Possible applications: • Customer Relationship Management and, more generally, the management of supply and demand • Extrapolation and analysis of data • Training and support for the growth of the individual's work
Perceived advantages and disadvantages of using AI in business processes	Advantages: • Better human decision making Disadvantages: • The investment may not always be repaid • AI may not be the best technological solution • AI is not always justified given the firm's activities • Shortage of competent people
Use of AI in decision making	AI is useful to support standard decisions, otherwise relying completely on AI is not a wise and efficient choice

Perceived advantages and disadvantages of using AI in decision making	Advantages: • Higher efficiency during the data collection and analytical phase • Overcoming the problem of specialisation and promoting interdisciplinarity • Work and everyday life facilitation Disadvantages: • Increasingly homogeneous solutions • Decrease of workers' level of skills • Ethics and fairness issues • Privacy issues • Responsibility issues • Possible distortions in the decision-making process • Adequacy of the decision in relation to the firm's nature

Source: author's elaboration.

The definitions of AI provided by the interviewees are very heterogeneous and reflect their professional role and education. This finding is in line with the absence of a universally recognised definition of AI even in the scientific literature (Sheikh et al., 2023) and suggests that AI is a complex and multifaceted technology. In addition, provided definitions focused not only on technical aspects of AI but also on how AI relates to human skills (e.g., ability to think, creativity, and problem solving).

Companies that were interviewed are looking forward to the use of AI in the future, especially for managing customers and stakeholders and getting data from large databases. This supports previous research that AI can be used effectively in these business tasks (Bhalerao et al., 2022; Bunte et al., 2021). Contrary to existing literature highlighting the need for all firms to adopt AI to remain competitive (Hansen & Bøgh, 2021) and the need for consultancy firms to urgently incorporate AI into their business (Samokhvalov, 2024), no consultancy SME mentioned the existence of competitive pressures within the consultancy sector to adopt AI. According to the interviewed firms, the expected challenges in adopting AI in business processes relate to the firm's size, the high investment that may not always be repaid, the existence of alternative high-level software and advanced technologies, the misalignment between the benefits offered by AI and the firm's activities, and the shortage of competent people. These findings confirm the internal economic, technology-related, and social challenges highlighted by previous literature (e.g., Bhalerao et al., 2022; Bunte et al., 2021; Hansen & Bøgh, 2021).

For decision making, interviewed firms perceive AI as a useful tool to support decisions (Duan et al., 2019), in line with the idea of decision augmentation, which envisages a collaboration between the human decision maker and AI to improve cognitive performance together (Langer & Landers, 2021).

According to the interviewed firms, several may be the advantages of using AI in decision making, such as higher efficiency during the data collection and analytical phase, better quality of decisions, and the relief from

performing certain work activities, especially the repetitive ones. These perceived potential benefits confirm the evidence found in previous studies (Bhalerao et al., 2022; Mantri et al., 2023). However, according to the interviewed firms, actual effectiveness and help of AI in decision making may depend on the type of work activity and is expected to be greater for decisions based on technical and objective conditions in manufacturing. This view is coherent with the idea that AI is useful for decisions of a structured and semi-structured type (Duan et al., 2019). However, the risk of receiving homogeneous solutions from AI is expected, and this is in contrast to the customers' demands for more tailored and innovative solutions from consulting firms (Samokhvalov, 2024). Similarly, the adequacy of AI decisions in relation to the firm's nature is questioned by interviewed firms.

At the same time, according to the interviewed firms, using AI in decision making may imply some disadvantages and poses issues that need to be addressed. For example, in the interviewees' view, AI does not seem to respect ethics and fairness as humans would. Moreover, the use of sensitive data by AI is considered with resistance. Lastly, responsibility for decisions taken by the AI is an issue that needs to be addressed since AI may cause distortions of the way of thinking and sometimes it is unclear how AI comes to a decision. This evidence is consistent with previous literature highlighting that AI may be associated with a lack of confidence in the technology, a lack of knowledge about how decisions are taken, and the desire to keep control (Leyer & Schneider, 2021).

Instead, the substitution of human decision makers due the use of AI is not considered a possible event because there is no overlap of roles: according to the interviewed firms, AI can make independent decisions, but a human may be required when awareness and master of a topic is necessary. AI may only thus play a supporting role to the human decision maker (Leyer & Schneider, 2021) and the value of the person is considered irreplaceable. Interviewees' opinions confirm the views that in the consultancy sector, AI will provide input to the decision making, but will not replace humans since consultants will remain accountable for the decisions taken and will play a key role due to their unique skills and client relationships (Feuerriegal et al., 2022; Samokhvalov, 2024).

6. Conclusions

This study examined how consultancy SMEs that have not yet adopted AI judge its adoption, focusing on its use in business activities and decision making, and its perceived consequences, advantages and disadvantages. The analysis revealed that the introduction of AI is viewed positively: all the interviewed firms would like to introduce AI in a more systematic way

for almost all the activities conducted. In particular, the use of AI in the field of Customer Relationship Management and the extrapolation and analysis of data is judged as particularly valuable. AI is also recognised as a useful tool to support decisions requiring a high intensity of data. In the interviewees' view, AI may offer several advantages in decision making, such as higher efficiency during the analytical phase. However, the adoption of AI in decision making raises caution and some issues need to be resolved. Specifically, according to the interviewed firms, ethics and privacy must be preserved, a responsible party for the decisions taken by the AI must be identified, and AI decisions should not be distorted.

This study contributes to the literature investigating the use of AI in businesses and in decision making. In particular, this study makes significant contributions to the growing body of literature on AI adoption by focusing on the often-overlooked context of consultancy SMEs. While most existing research emphasizes AI implementation in larger firms or across various sectors, this study offers a more nuanced understanding of the specific challenges and opportunities faced by consultancy SMEs. Moreover, our study focuses on consultancy SMEs that have not yet implemented AI, thus offering insights into expectations, concerns, and barriers specific to this context. By investigating how consultancy SMEs perceive AI, this research uncovers critical distinctions between AI applications in business processes and decision-making activities, allowing for a clearer understanding of where AI may be most beneficial and where challenges are most significant. Consultancy SME may, in fact, encounter difficulties in the introduction of AI due to several internal economic, technology-related, and social challenges (Cubric, 2020), while at the same time being pushed by the consultancy sector to urgently incorporate AI (Samokhvalov, 2024). What emerged from the analysis is that consultancy SMEs do not seem to be influenced by their size or sector in their choice to introduce AI in decision making and how they judge its use. Rather, they seem to exhibit the same resistance as all types of firms. Moreover, the study challenges prevailing assumptions in the literature regarding competitive pressures for AI adoption. Contrary to previous findings that emphasize the need for rapid AI integration to stay competitive, consultancy SMEs in this study do not feel an immediate urgency to adopt AI. Instead, their decisions are more influenced by the perceived value of AI in relation to their specific business models, resources, and client needs. This highlights the importance of context in understanding AI adoption; what drives adoption in larger or more resource-intensive firms may not apply in the same way to consultancy SMEs.

The study also introduces the concept of perceived feasibility in AI adoption, where certain business processes are viewed as more aligned with AI capabilities than others. For instance, consultancy SMEs are more open to

adopting AI in standardized, data-driven tasks but remain hesitant to use it in complex, strategic decision-making, where human expertise and relational dynamics play a critical role. This nuanced view not only contributes to the literature but also provides practical implications for managers and policymakers who aim to support AI adoption in this sector.

Important managerial and policy implications can be derived from this analysis. Our findings underscore the need for tailored strategies when promoting AI adoption among consultancy SMEs. Instead of a one-size-fits-all approach, support mechanisms should consider the specific sectoral dynamics, firm size, and the strategic priorities of these firms. By highlighting these distinct considerations, this research provides valuable insights for both scholars and practitioners seeking to better understand the conditions under which AI adoption can be effectively realized in the consultancy sector. Specifically, from a managerial point of view, adopting AI in business and in decision making can bring numerous benefits. However, consultancy SMEs must be aware of the potential disadvantages and issues associated with AI adoption. By understanding these drawbacks, consultancy SMEs can make informed decisions and mitigate risks effectively, while maximising the benefits of AI. In particular, to effectively shift perceptions and encourage AI adoption among consultancy SMEs, targeted measures should be implemented. Firms should consider the development of tailored AI training programs that not only build technical expertise but also address specific concerns related to AI, such as ethical implications and decision-making transparency. These programs should be designed to demystify AI, making its benefits more tangible and directly applicable to the unique needs of consultancy SMEs. In addition, creating small-scale pilot projects that demonstrate the practical value of AI in real-world consultancy scenarios could be instrumental. These projects would serve as proof of concept, showing how AI can enhance efficiency, improve client outcomes, and maintain the human element that is crucial in consultancy.

From a policy point of view, understanding the resistance to AI adoption among consultancy SMEs is crucial for policy makers to design effective interventions that support and guide these firms in adopting this technology. Through their intervention, policy makers can play a key role in facilitating the successful integration of AI into the consulting sector. In particular, government and industry bodies could offer financial incentives or subsidies for consultancy SMEs that invest in AI adoption. Such incentives could lower the initial financial barriers that many SMEs face. Furthermore, developing clear regulatory guidelines that address the ethical and privacy concerns surrounding AI could help build trust and reduce resistance among firms hesitant to adopt AI. Additionally, establishing AI adoption support networks or consultancy-specific AI centers of excellence could provide ongoing support, resources, and shared knowledge to

consultancy SMEs, fostering a community of practice that encourages the broader adoption of AI across the sector. By implementing these targeted measures, both at the managerial and policy levels, the barriers to AI adoption can be mitigated, and perceptions within consultancy SMEs can be positively influenced, leading to a more widespread and effective integration of AI into their business processes.

This study is not devoid of limitations, which may guide future research developments. First, our study focuses on consultancy SMEs. It would be interesting to investigate whether larger firms in the consultancy sector judge the use of AI in business and in decision making in the same way. In larger firms, the introduction of AI may be more profitable since these firms have a higher investment capacity and can invest resources in the training of workers and in their acceptance of this particular technology.

Second, a further limitation of the research is represented by the context of analysis. Italian firms were selected to confine the analysis to an area with a common economic, political and social context. It is therefore proposed to extend the analysis at international level. This analysis could, for example, assess the impact of culture, which is a factor affecting the introduction of new technologies and its acceptance.

Third, the use of the interview method may represent a limitation of this analysis. Conducting interviews enables the collection of more in-depth evidence on a certain topic. However the analysis sample is narrowed down. It would be interesting to conduct a quantitative analysis (e.g., using questionnaires) to ascertain whether what emerged from our analysis is confirmed on a larger sample of consultancy SMEs and whether there are certain patterns in the way the use of AI in business and in decision making is assessed that our analysis did not allow us to identify.

Finally, this study focused solely on how consultancy SMEs that have not yet adopted AI assess its adoption, thus considering only the perspective of businesses. However, customer perspective is crucial, especially in the consulting sector. Future studies could analyse how customers perceive the solutions proposed by AI, for instance, in terms of customisation and adequacy, ethics, and reliability. Moreover, it could be interesting to investigate their willingness to pay for solutions proposed by AI compared to those devised by humans.

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Appendix 1: Interview guideline

Definition of AI
- *What would you call AI?*

Future adoption of AI
- *Are you considering introducing AI in your firm?*
- *To what extent would you like to adopt AI?*

Use of AI in business processes
- *For which business activities can AI be used most profitably?*

Advantages and disadvantages of using AI in business processes
- *What could be the advantages of AI in business processes?*
- *What could be the disadvantages?*

Use of AI in decision making
- *Would you use AI to make decisions? If so, what kind of decisions?*

Advantages and disadvantages of using AI in decision making
- *What could be the advantages of AI in decision making?*
- *What could be the disadvantages?*
- *How do you judge the use AI in decision making regarding the following topics:*
  - *Ethics and fairness*
  - *Privacy*
  - *Responsibility*
  - *Transparency and explicability*
- *Do you think that your position as a decision maker could be threatened by the introduction of AI?*